



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,094	04/02/2004	Rohit V. Gaikwad	15272US02	2127
23446 7590 05/29/2008 MCANDREWS HELD & MALLOY, LTD 500 WEST MADISON STREET SUITE 3400 CHICAGO, IL 60661				
EXAMINER LU, ZHIYU				
ART UNIT 2618		PAPER NUMBER		
MAIL DATE 05/29/2008		DELIVERY MODE PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/817,094

Applicant(s)

GAIKWAD ET AL.

Examiner

ZHIYU LU

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(c), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/12/2008 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1 and 23 have been considered but are moot in view of the new ground(s) of rejection.

3. Applicant's arguments filed 03/12/2008 have been fully considered but they are not persuasive.

Regarding rejection on claim 15, applicants argued that Kim et al. (US2005/0095993) do not teach "the radio frequency communication system adjusting at least one characteristic of the receive signal strength indicator using the switching circuitry and the transmitter circuitry."

However, the Examiner does not agree. In the claim, applicants do not specify what at least one characteristics of the receive signal strength indicator is adjusted and how the switching circuitry and the transmitter circuitry are in use during the adjustment.

Art Unit: 2618

Applicants' claim language is broad to be interpreted otherwise. In Kim, the first testing and measurement results a receive signal strength indicator (114 of Fig. 6, paragraph 0041), wherein **transmitter, switch, and receiver are in used**. Then the second testing and measurement with receive attenuation mode enabled results a different receive signal strength indicator (116-118 of Fig. 6, paragraphs 0042-0043), wherein **transmitter, switch, and receiver are all in used**. So, the transmitter and the switch are definitely in use in adjusting the at least one characteristic of the receive signal strength indicator. Based on the broad language of claim 15, Kim et al. do anticipate the limitation.

Thus, the rejection is proper and maintained.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the processing" in line 13. There is insufficient antecedent basis for this limitation in the claim.

In claim 23, applicants claim "a radio frequency communication system comprising: transmitter circuitry...; switch circuitry; receiver circuitry...; and the radio frequency communication system..." "The radio frequency communication system" is

Art Unit: 2618

not part of “a radio frequency communication system”, which makes the apparatus indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 15-18 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim et al. (US2005/0095993).

Regarding claim 15, Kim et al. anticipate a radio frequency communication system comprising:

transmitter circuitry for generating a radio frequency signal, the output of the transmitter circuitry coupled to a least one antenna (Fig. 2);

switching circuitry (73 of Fig. 2) having an input coupled to the at least one antenna (86 of Fig. 2), an output, and at least a first mode and a second mode of operation, the first mode of the switching circuitry passing a signal from the input to the output with a relatively lower level of attenuation, and the second mode of the switching circuitry passing a signal from the input to the output with a relatively higher level of attenuation (paragraphs 0012-0013, Fig. 6);

receiver circuitry for accepting a radio frequency signal, the receiver circuitry producing at least a receive signal strength indicator (114 of Fig. 6, paragraph 0041); and the radio frequency communication system adjusting at least one characteristic of the receive signal strength indicator using the switching circuitry and the transmitter circuitry (Fig. 6, paragraphs 0040-0043).

Regarding claim 16, Kim et al. anticipate the limitation of claim 15.

Kim et al. anticipate the arranging, taking, configuring, performing, and adjusting occur on a periodic basis (paragraph 0043).

Regarding claim 17, Kim et al. anticipate the limitation of claim 15.

Kim et al. anticipate the radio frequency communication system communicates digital information (paragraph 0027).

Regarding claim 18, Kim et al. anticipate the limitation of claim 15.

Kim et al. anticipate the receiver portion and the transmitter portion are located within the same integrated circuit (paragraph 0012).

Regarding claim 22, Kim et al. anticipate the limitation of claim 15.

Kim et al. anticipate wherein the adjusting comprises modifying at least one threshold related to the processing of receive signal strength indicator data used in the operation of the radio frequency communication system (paragraph 0044).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3-4 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (US2004/0064281).

Regarding claim 1, Kim teaches a method of operating a radio frequency communication system having a receiver portion and a transmitter portion, the method comprising:

arranging the transmitter portion in a first transmitter configuration and the receiver portion in a first receiver configuration (Figs. 4-9, where input power of transmitter is scaled from P_{min} to P_{max} , and Fig. 3 concurrently RSSI module of receiver is being adjusted, paragraphs 0008, 0040);

taking a first signal power measurement (RSSI 91 of Fig. 3, paragraph 0039);
configuring the transmitter portion in a second transmitter configuration and the receiver portion in a second receiver configuration, wherein the first transmitter configuration is different than the second transmitter configuration and the first receiver configuration is different than the second receiver configuration (Figs. 4-9, where obviously input power of transmitter can be scaled from P_{min} to P_{max} to ensure accuracy, and Fig. 3 concurrently RSSI module of receiver is being adjusted, paragraphs 0008, 0040);

performing a second signal power measurement (RSSI 91 of Fig. 3, paragraph 0039); and

adjusting the operation of the receiver portion based upon the first signal power measurement and the second signal power measurement (Figs. 4-8, where the adjustment is based on at least two RSSI measurements, e.g. Fig. 4), wherein the adjusting comprises modifying at least one threshold related to the processing of receive signal strength indicator data used in the operation of the radio frequency communication system (obviously as RSSI module being corrected, maximum RSSI and minimum RSSI considered as thresholds are modified in RSSI/power level table).

Regarding claim 3, Kim teaches the limitation of claim 1.

Kim teaches the radio frequency communication system communicates digital information (paragraph 0028).

Regarding claim 4, Kim teaches the limitations of claims 1 and 15.

Kim et al. teaches the receiver portion and the transmitter portion are located within the same integrated circuit (paragraph 0034).

Regarding claim 10, Kim teaches the limitation of claim 1.

Kim teaches wherein the arranging provides a relatively lower level of radio frequency signal to the receiver portion (P_{min} of Fig. 4).

Regarding claim 11, Kim teaches the limitation of claim 10.

Art Unit: 2618

Kim teaches wherein the relatively lower level of radio frequency signal corresponds to a signal power of less than approximately -90 dBm (Fig. 6, paragraph 0044).

Regarding claim 12, Kim teaches the limitation of claim 1.

Kim teaches wherein the configuring provides a relatively higher level of radio frequency signal to the receiver portion (P_{max} of Fig. 4).

Regarding claim 13, Kim teaches the limitation of claim 12.

Kim teaches wherein the relatively higher level of radio frequency signal corresponds to a signal power of greater than approximately -30dBm (Fig. 6, paragraph 0044).

7. Claims 2 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (US2004/0064281) in view of Bednekoff et al. (US Patent#6603810).

Regarding claim 2, Kim teaches the limitation of claim 1.

But, Kim does not expressly disclose the arranging, taking, configuring, performing, and adjusting occur on a periodic basis.

Bednekoff et al. teach the arranging, taking, configuring, performing, and adjusting occur on a periodic basis (column 7 lines 25-31).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate having periodic calibration taught by Bednekoff et al. into the method of Kim, in order to ensure consistent reception.

Art Unit: 2618

Regarding claim 6, Kim teaches the limitation of claim 1.

But, Kim does not expressly disclose the adjusting further comprises modifying the value of a receive signal strength indicator using an affine function.

Bednekoff et al. teach a receiver calibrating method that adjusts RSSI value using RSSI correction factors according a look-up table, where mathematical affine relation involved therein (column 7 lines 9-60).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate using adjusting RSSI value with affine function taught by Bednekoff et al. into the method of Kim, in order to provide appropriate RSSI adjustment to the receiver.

Regarding claim 7, Kim and Bednekoff et al. teach the limitation of claim 6.

Kim and Bednekoff et al. teach wherein the affine function is implemented using a look-up table (column 7 lines 9-60 of Bednekoff et al.).

8. Claim 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (US2004/0064281) in view of Johnson (US Patent#6704352).

Regarding claim 5, Kim teaches the limitation of claim 1.

But, Kim does not expressly disclose wherein the adjusting further comprises calibrating at least one of a slope and a fixed offset of a receive signal strength indicator.

Art Unit: 2618

Johnson teaches a receiver calibrating method that comprises calibrating at least one of a slope and a fixed offset of a receive signal strength indicator (column 1 lines 37-62, column 3 line 23 to column 4 line 27, column 10 lines 12-41).

Therefore, it would have been obvious to one of ordinary skill in the art to incorporate details of calibrating receiver gain taught by Johnson into the method and system of Kim, in order to provide appropriate adjustment to RSSI over time.

Regarding claim 9, Kim teaches the limitation of claim 1.

But, Kim does not expressly disclose wherein the adjusting further comprises modifying at least one of a receive signal strength indicator slope and a receive signal strength indicator fixed offset in an analog receive signal strength indicator circuit.

However, Kim discloses analog domain operation (paragraph 0028).

Johnson teaches a receiver calibrating method that comprises calibrating at least one of the slope and the fixed offset of a receive signal strength indicator (column 1 lines 37-62, column 3 line 23 to column 4 line 27, column 10 lines 12-41).

Therefore, it would have been obvious to one of ordinary skill in the art to incorporate details of calibrating receiver gain taught by Johnson into the method and system of Kim, in order to provide appropriate adjustment to RSSI over time.

9. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (US2004/0064281) in view of Csapo et al. (US Patent#6801788).

Regarding claim 14, Kim teaches the method of claim 1.

Art Unit: 2618

But, Kim does not expressly disclose further comprising adjusting the operation of the transmitter portion based upon the first signal power measurement and the second signal power measurement.

Csapo et al. teach adjusting the operation of the transmitter portion based upon receiver signal strength settings (column 10 lines 29-42).

Therefore, it would have been obvious to one of ordinary skill in the art to incorporate using resulted receiver signal strength settings to calibrate transmitter taught by Csapo et al. into the method of Kim, in order to provide available data for transmitter calibration.

10. Claims 15 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US2004/0063412).

Regarding claim 15, Kim et al. teaches a radio frequency communication system comprising:

transmitter circuitry for generating a radio frequency signal, the output of the transmitter circuitry coupled to a least one antenna (Fig. 2);

switching circuitry (73 of Fig. 2) having an input coupled to the at least one antenna (86 of Fig. 2), an output, and at least a first mode and a second mode of operation, the first mode of the switching circuitry passing a signal from the input to the output with a relatively lower level of attenuation, and the second mode of the switching circuitry passing a signal from the input to the output with a relatively higher level of attenuation (Figs. 4-5);

receiver circuitry for accepting a radio frequency signal, the receiver circuitry producing at least a receive signal strength indicator (87 of Fig. 3); and

the radio frequency communication system adjusting at least one characteristic of the receive signal strength indicator using the switching circuitry and the transmitter circuitry (Figs. 3-6, where the attenuation changes are obviously considered as configuration changes in transmitter path, and attenuation changes in switching circuitry and transmitter circuitry changes RSSI).

Regarding claim 23, Kim et al. teach a radio frequency communication system comprising:

transmitter circuitry configured to be arranged in first and second configurations, wherein the first configuration is different than the second configuration (Figs. 4-5, where the attenuation changes are obviously considered as configuration changes in transmitter path);

switching circuitry (73 of Fig. 3);

receiver circuitry for accepting a radio frequency signal from the switching circuitry, the receiver circuitry producing at least a receive signal strength indicator (87 of Fig. 3) and

the radio frequency communication system adjusting at least one characteristic of the receive signal strength indicator using the switching circuitry and the transmitter circuitry (Figs. 3-6, where attenuation changes in switching circuitry and transmitter circuitry changes RSSI).

11. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US2004/0063412) in view of Johnson (US Patent#6704352).

Regarding claim 19, Kim et al. teach the limitation of claim 15.

But, Kim et al. do not expressly disclose wherein the adjusting further comprises calibrating at least one of a slope and a fixed offset of a receive signal strength indicator. Johnson teaches a receiver calibrating method that comprises calibrating at least one of a slope and a fixed offset of a receive signal strength indicator (column 1 lines 37-62, column 3 line 23 to column 4 line 27, column 10 lines 12-41).

Therefore, it would have been obvious to one of ordinary skill in the art to incorporate details of calibrating receiver gain taught by Johnson into the method and system of Kim et al., in order to provide appropriate adjustment to RSSI over time.

12. Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US2004/0063412) in view of Bednekoff et al. (US Patent#6603810).

Regarding claim 20, Kim et al. teach the limitation of claim 15.

But, Kim et al. do not expressly disclose the adjusting further comprises modifying the value of a receive signal strength indicator using an affine function.

Bednekoff et al. teach a receiver calibrating method that adjusts RSSI value using RSSI correction factors according a look-up table, where mathematical affine relation involved therein (column 7 lines 9-60).

Art Unit: 2618

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate using adjusting RSSI value with affine function taught by Bednekoff et al., in order to provide appropriate RSSI adjustment to the receiver.

Regarding claim 21, Kim et al. and Bednekoff et al. teach the limitation of claim 20. Kim et al. and Bednekoff et al. teach wherein the affine function is implemented using a look-up table (column 7 lines 9-60 of Bednekoff et al.).

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ZHIYU LU whose telephone number is (571)272-2837. The examiner can normally be reached on Weekdays: 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571) 272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2618

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Z. L./
Examiner, Art Unit 2618

/Nay A. Maung/
Supervisory Patent Examiner, Art Unit
2618

Zhiyu Lu
May 21, 2008